

Growing of forage crops in organic farming

Aim. To set basic directions of development of organic Fodder production in Ukraine and comparative productivity of one-year and long-term forage phytocenoses depending on fertilizers. Methods. System analysis, field, laboratory, conomics and mathematics. Results. Basic directions over of complex development of organic fodder production are brought, and also set for him the best long-term leguminous herbares, mixtures of one-year cultures and fertilizer. Conclusions. Organic fodder production harmoniously combines with steady development and rational nature use and must develop complex. The basic block of green conveyer at organic agriculture are long-term leguminous herbares. Among one-year herbares most productive are mixtures with a spondyle sorghum Sudanese and by a corn on a background bringing of organic fertilizers of type of gumigan .

Keywords: long-term and one-year herbares, ecologically safe forage, organic fodder production .

For upgrading of life of people in the conditions of deepening on a world scale of ecological crisis there is a proof tendency to the increase of requirement in the environmentally sound foodstuffs of animal origin. The production of such foods can provide organic fodder production that is a strong combining link between a plant-grower and stock-raising. However to the last time in Ukraine it is not conducted the search of directions, decision of scientific and practical measures of development of organic fodder production.

Aim of researches - to set basic directions of development of organic fodder production in Ukraine and comparative productivity of one-year and long-term forage phytocenoses depending on fertilizers.

Methodology of researches. Directions of development of organic fodder production are set on the basis of generalization of literary sources. Research from the study of conformities to law of forming of the productivity of long-term leguminous herbares and mixtures of one-year cultures in the system of green raw material conveyers at the organic production of feed raw material we are conduct in the "Experienced economy "Shepherds" of HHLJ "Institute of agriculture of NAAS" on darkly-grey soil after the methodologies generally accepted in fodder production.

In experience from the study of the comparative productivity of different types of long-term leguminous herbares of research conducted on the 3th backgrounds of fertilizers according to a chart (table. 1). Preparation of waxed the microplanet, that is mixture macro- and microelements in a chelate form, brought in sprinkling of above-ground mass in the phase of bushing out of herbares in a 1th hay-crop in a dose 2 л/and. On cereal herbage additionally brought in nitrogen of mineral fertilizers in the dose of N90 (for 2 measures). The studies of the productivity and quality of herbage from mixtures of one-year cultures in the basic and post-graduate sowing conducted at the different systems a fertilizer: organic with bringing of complex granular organic fertilizer of Gumigan in a dose 250 kg/and and mineral with bringing of mineral fertilizers in the dose of N45P30K45.

Results of researches. Organic fodder production - it a production ecologically of safe forage not only, by raw material for the production of that, in particular grass forage, there is бiомаса of long-term and one-year phytocenoses in the system of green (raw material) conveyers. Organic fodder production is closely written into the context of steady development and rational nature management [3, 4]. To forage lands, especially long-term herbares and ray lands, characteristic multifunctionness.

An organic production ecologically of safe forage foresees environmental preservation yet and. Forage lands execute an enormous nature protection stabilizing role is in agro-landscapes, protecting soils from erosion, and water sources - from a silting-up and contamination [4, 6]. Therefore in Ukraine it follows gradually to diminish thrown of the landed lands by open, enter the program of recreation of meadows lands

and network of wildlife preserves, reserves, hunting lands, that will assist maintenance of biovariety of plants, animals, in particular kinds that is brought to the red book. Exactly on natural forage lands accumulated 50-80% flora of grassy plants [5]. Carnivorous, in that plants enter from different botanical groups, in particular and from the group of grasshopper, that are medical characteristics often, provide the best quality of feed and stock-raising products, than onespecific and simple phytocenoses [11]. On forage, in particular on meadow lands, for maintenance of flora and fauna create in different countries the network of reserves, wildlife preserves, hunting and reindeer breeding growing that mainly are national pride [2, 7]. It is well-proven that local red deer of natural and climatic zones of similar to are Ukraine, and some other types of wild animals for maintenance in large open-air cages and grazing on natural herbage capable it is good to propagate, quickly to work out living mass and is the important source of dietary feed of people. The earth shown out of agricultural turnover, in particular streamside meadows, is enormous potential for the reindeer breeding. Advantages of this industry consist in the cutback of spending on maintenance of animals and necessities of personnel comparatively with the traditional cattle breeding.

Reserves can be created and on earth, in the order of maintenance and recreation for the descendants of the peat fund, and also the vegetable and animal world, in 40-50 destroy from the status of dried and transferred in the previous swamped or wetland state that is Already practiced in Europe [1]. In Ukraine it has the special value. In fact, they are overgrew weeds, with the started drainage systems or the resource of that a long ago outspent.

At organic fodder production, the increased attention is spared to the control of quality of forage by certified laboratories. Forage should comply with the requirements of the state standards of Ukraine, where control is foreseen not only after the basic indexes of quality but also on safety indexes [6]. Except it, it is necessary to provide, as it is practiced in European Union countries, quality monitoring with a deep study on the chemical composition of livestock, taking into account new ideas about biochemical processes, which substantially affect the digestible and comprehensibility of Forage [12].

Last years through strengthening of processes of аридизації climate and ксерофітізації of vegetable cover for providing of steady development there was a necessity of search and introduction at Forest-steppe and even Polesye of drought-resisting types of herbares from the group of mesoxerophytes and xeromesophytes [8, 10]. In north regions climatic terms get better, and in south get worse, that is why the stable conduct of organic fodder production without introduction of drought-resisting kinds or irrigation is impossible.

An organic production is closely related to ecological tourism [3, 9]. To the feed of the site in the swingeing majority, as ecologically clean territory and the source of ecologically safe forage is an important component of ecological tourism, which in combination with organic production meets the requirements for sustainable development and rational nature management. Terms are created for the improvement of the quality of life of man. Due to the environmentally sound food and food safety (food and milk), due to non-use or limited use of chemicals, it forms a safe environment ecologically. All of it and the presence of reserves in combination with sights of nature and history attracts tourists. In the direction of development of tourism industry it is necessary to develop and introduce the program of development of ecological tourism, in particular tourism, where the feeds of the material devoted considerable attention to the important element of the service quality. In Ukraine, natural terms are friendly to the development of ecological tourism. High quality of stock-raising products must provide organic farming, organic production, direct farming and other economies (independently or uniting in cooperative stores) and provide food to the agro-tourist feed.

In Ukraine there are developments that can be used for organic bulk production. First of all, the effective use of leguminous herbs includes: measures for overcoming bean fat, particle size or by turn placing of livestock and cereal components in separate lines or stripes, rational combination of symbiotic and mineral nitrogen, forming of the However, research on the best long-term and one-year cultures in various fertilizer variants has not yet been carried out in organically produced feedstock conditions.

The analysis of results of researches testifies that among long-term herbares, which are the basic block of green or raw material conveyer for the production of hay or haylage, the most suitable for organically produced livestock production are lobster herbares (a clover rayon, lavender Ukrainian, larvae sowing and yellow) that due to nitrogen fixation without fertilizers provide a high yield. In a variant without top-dressing in a sum after 3 hay-crops in the average for 2012-2014 provided a receipt from 1 hectare 8.91-11.93 tons of

dry mass with the level of piling up of the symbiotic nitrogen of leguminous herbares 155-265 kg / and. Among the legumeous herbares most productive and with the most level of piling up of symbiotic nitrogen and alfalfa appeared sowing Olga, with the least - the glad Ukrainian Ajax. The application of the preparation of waxals (or P45K90) promoted the productivity of long-term leguminous herbs is 8-17%. Comparatively with cereal, the leguminous herbares were more productive in 1,7-2 times. More effective was a factor of long-term herbares, than a factor of fertilizer, part of which in the formation of productivity for years researches presented 57-66%.

The investigated long-leguminous herbals were characterized not only by high productivity but also by the kind of quality of the forage. They accumulated 15.5-21% of raw protein in the dry flower in the early flowering phase, which is 5-8% more or less comparatively with an anesthetic (table 2). They had the best mineral composition also, in particular, for maintaining a calcium that accumulated in 2-2.5 times more than an awnless colon.

The productivity of all investigated mixtures of one-year-old cultures in the middle for 2012-2014, which is the auxiliary block of green conveyer in a variant without application of fertilizers, presented 4.85-12.47 t / and dry weight (Table. 3). Most productive were mixtures of Sudanese sorghum with a diaper and radish oily, and also corn with lupine narrow-leaved, which after productivity has approached long-term herbares both in basic and post-sowing sowing. Traditional mixtures of one-year cultures (a combination of triticale and winter-annual rape) in the middle for 2012-2014 were characterized by productivity less in 1.5-2.5 times. Bringing of hygromican is promoted by 3-7%, N of 45P30K45 - 25-40%. Researches show that productivity depends on the specific composition of grass mixtures and systems of fertilizers. More effective factor on the productivity of herbage from mixtures of one-year cultures was a factor of grass mix.

Conclusions

Organic fodder production is harmoniously combined with sustainable development and rational nature management, and must develop in the direction of the production of ecologically safe food, creating an ecologically safe environment, maintenance of biovariety and others. Among the long-term livestock herbals that are the basic A block of green or raw material conveyer for the production of hay or hay in the conditions of the northern part of the Forest-steppe, suitable for organic fodder production is a clover raven, lavender Ukrainian, alfalfa sowing and yellow. They without application of nitric fertilizers at the timely mowing are characterized not only by high productivity but also excellent quality of feed.

Among the one-year herbares in the basic and repeated sowing of the most productive are mixtures of spondyle cultures of sorghum Sudanese and corn with a diaper, lupine, narrow-leaved and radish oily on the background of the organic fertilizer of humigrains.

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